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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,306	01/10/2005	Hideyuki Fujita	SIG-006	6612

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EXAMINER

SEIFU, LESSANWORK T

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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12/27/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/511,306

Applicant(s)

FUJITA, HIDEYUKI

Examiner

Lessanework T. Seifu

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/15/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show four vanes in Fig. 3 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-10 are rejected because, in claim 1, the phrase "while adjusting the reactivity in the presence of the reducing agent and polymerization inhibitor" is not clear. The specification does not provide as to how the claimed step of "adjusting the reactivity" is performed.

Claims 1-10 are rejected because; the phrase "higher activities" in claim 1 is a relative term which renders the claim indefinite. The phrase "higher activities" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 2 recites the limitation "the starting material" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 is rejected because it is unclear what is intended by the phrase "...suspending means ... for suspending the ozone gas...". The specification, on page 5, lines 9-10, discloses that the suspending means is formed of a horizontal rotary-rod wound with wires in a resilient manner. It is unclear how the recited apparatus suspends a gas.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 9 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Murakami et al. (WO 02/38708).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 9 and 10, Murakami et al. disclose an apparatus for manufacturing engine fuel comprising: a reaction drum comprising a stirring means, wherein the stirring means comprises a rotating propeller plate having a peripheral portion formed with saw-toothed cutouts (see pg. 11, lines 2-7); a baffle provided at an inner periphery of the reaction drum, wherein the baffle comprises a vertical plate having a widthwise portion protruded from an inner peripheral wall surface of the reaction drum toward the center of said reaction drum, and wherein the baffle is formed with saw-toothed cutouts at the protruded end; and a delivering port for delivering materials into the reaction drum (see fig. 3).

10. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami et al. (WO 02/38708).

Regarding claims 1, 2, and 8, Murakami et al. disclose a method for manufacturing engine fuel (see Abstract), comprising: a pretreatment step for filtering a higher-boiling-point vegetable oil/fat; a first treatment step for introducing ozone, a reducing agent and a polymerization inhibitor, where in the first treatment step includes stirring (see Example 1). The reference further discloses that, while dangerous from a point of safety, it is desirable to have a stirring rotational speed of 10,000 rpm to 30,000 rpm. Murakami et al. further disclose a first filtering step for filtering the higher-boiling-point oil/fat so as to remove therefrom impurities (see Example 1); Murakami et al. further disclose a second treatment step for simultaneously introducing ozone, into the filtrate, so as to crack the higher-boiling-point oil/fat component while subsequently stirring the higher-boiling-point oil/fat component. Murakami et al. further discloses an antifreezing additive being delivered in the second treatment step comprising castor oil, wherein the antifreezing additive constitutes 0.05% to 0.1% by weight based on the starting materials (see pg. 7, last paragraph and fig. 6).

Applicant's limitation with respect to adding a reducing agent and polymerization inhibitor in the second treatment step is not a patentable distinction over the prior art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have added the reducing agent and polymerization inhibitor into the second treatment step of Murakami et al. for the purpose of controlling oxidation reaction and polymerization reaction just as effected in the first treatment step of Murakami et al. (see pg. 12, lines 3-11).

Regarding claim 3, the method by which the vegetable oil is obtained does not further limit applicant's claimed method of manufacturing engine fuel.

Regarding claim 4, the limitations recited in the claim reads on Murakami et al. disclosure of filtration process step wherein a filtering medium including at least one of activated clay, diatomaceous earth, zeolite, activated carbon, and bone ash is used in an amount of 20 kg to 25 kg per 1 kiloliter of the starting materials (see pg. 12, lines 14-25).

Regarding claim 5, Murakami et al. disclose that the treatment step comprises a step for introducing ozone in a gaseous form at a concentration of 500 ppm to 30,000 ppm (see pg. 11, lines 1-13). Applicant's limitation to the ozone being introduced in a form of ozone-containing gas is not a patentable distinction over the prior art, because it is within the level of ordinary skill in the art to supply the ozone gas by any suitable means.

Regarding claim 6, Murakami et al. disclose that the reducing agent includes ferric oxide compound or a copper compound, in an amount of 0.15 g per liter of starting material so that the starting material is not excessively oxidized (see pg. 12, lines 2-5). Applicants claimed limitation to an amount of 0.15 g per 1 kiloliter of reaction liquid is not a patentable distinction over the prior art, because it is within the level of ordinary

skill in the art to select any amount of the desired reducing agent when optimizing the process of Murakami et al.

Regarding claim 7, Murakami et al. disclose that the polymerization inhibitor includes a phosphorus compound and is added at an amount of 0.2 g to 0.25 g per 1 kiloliter of the starting materials.

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumura et al. (EP 1 026 224).

Regarding claim 12, Matsumura et al. disclose apparatus for manufacturing engine fuel from waste vegetable oil comprising: a starting-material tank for storing oil/fat therein (see fig. 9); a filtering device for filtering out solid components from raw materials (see fig. 5); a first reaction vessel (11); an oil/water separation device (see fig. 3); a processing tank (30) which is capable of functioning as applicant's filtering medium charging vessel (see figs. 4 and 9); a first filtering device (40); a second reaction vessel (50) for reacting ozone with the filtered oil/fat; a second filtering device (61) for conducting second filtering. Regarding applicant limitation to the claimed adding device, the processing tank (30) disclosed in the reference Matsumura et al. is capable of equally function as applicants adding device, since there is no substantial structural difference between the processing tank (30) and applicant's adding device. Matsumura et al. further disclose an impurity adsorbing vessel and a filtering vessel (see fig. 8).

With respect to applicant's limitation to each of the first reaction vessel and the second reaction vessel being provided with a delivering port, the limitation is not a patentable distinction over the prior art. As evidenced by the reference Matsumura et al. (see paragraph [0027] and fig. 4), it is well known in the art to provide delivering port/ intake valve to a reactor for introducing materials into the reactor.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sutoris et al. (US 6,518,453) disclose a polymerization inhibitor containing phosphorus compound. Gatechair et al. (US 5,290,888) disclose a process for preventing the fouling of processing equipment including reactors, pipes, stills, distillation columns, cracking towers and heat transfer surfaces during the processing of a monomer or oligomer polymerizable by free radical initiation. The reference further discloses phosphorous containing compound as a polymerization inhibitor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lessanework T. Seifu whose telephone number is 571-270-3153. The examiner can normally be reached on Mon-Thr 7:00am-5:30pm.

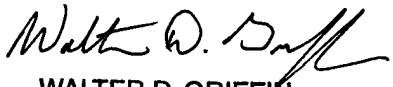
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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LS


WALTER D. GRIFFIN
SUPERVISORY PATENT EXAMINER